

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

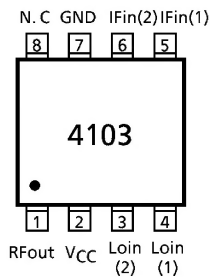
TA4103F

1.9GHz BAND UP CONVERTER APPLICATION

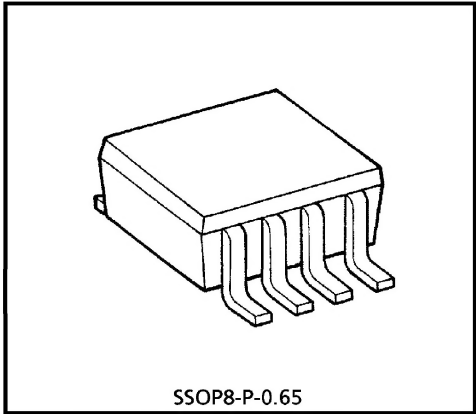
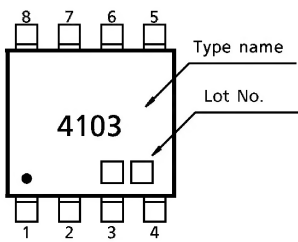
FEATURES

- Built in Lo and IF buffer amplifiers.
- Double balanced MIX circuit
- High conversion gain : $G_C = 3\text{dB}$ (Typ.)
- Recommended operating voltage : $V_{CC} = 2.7 \sim 3.3\text{V}$

PIN ASSIGNMENT (Topview)



MARKING



Weight : 0.02g (Typ.)

MAXIMUM RATING (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	5	V
Total Power Dissipation	P_D (*)	300	mW
Operating Temperature	T_{opr}	- 40~85	°C
Storage Temperature Range	T_{stg}	- 55~125	°C

(*) When mounted on the glass epoxy board of 2.5cm² × 1.6t.

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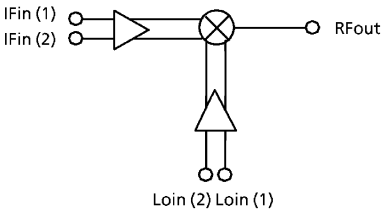
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ELECTRICAL CHARACTERISTICS ($V_{CC} = 3V$, $T_a = 25^\circ C$, $Z_g = Z_l = 50\Omega$)

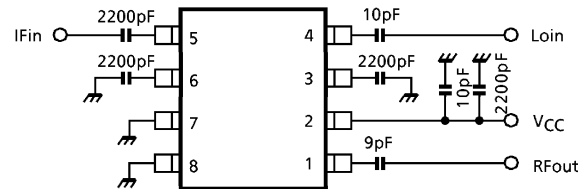
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
RF Frequency Range	f_{RFout}	—		1895	—	1918	MHz
IF Frequency Range	f_{IFin}			220	—	250	MHz
Lo Frequency Range	f_{Loin}			1645	—	1698	MHz
Circuit Current	I_{CC}	—	Non Carrier	23	26.5	33	mA
Conversion Gain	G_C	1	$P_{Loin} = -20dBmW$	1	3	—	dB
Output Power At 1dB Gaing Compression	P_{o1dB}			-19	-17	—	dB
Lo-RF Leakage Power	P_{RFLo}			—	—	-20	dBmW
Lo-IF Leakege Power	P_{IFLo}			—	—	-33	dBmW
Adjacent Channel Leakage Power Ratio	P_{adj}		$P_{RFout} = -18dBmW$ $P_{IFin} = \text{Adjusted}$ $\Delta f = 600kHz$ (Note)	—	-63	—	dB

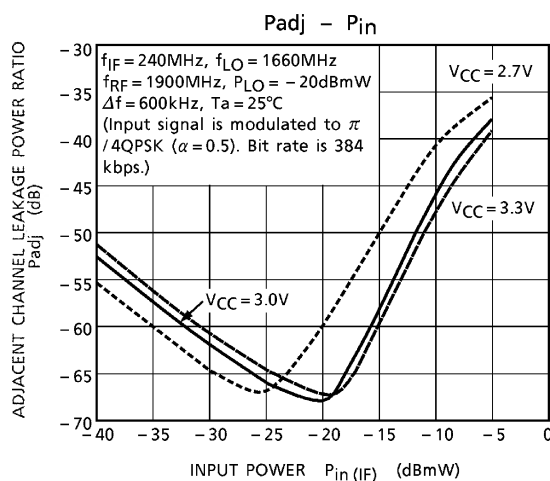
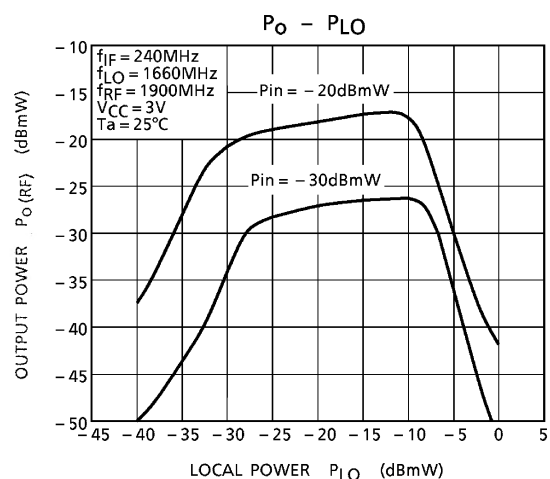
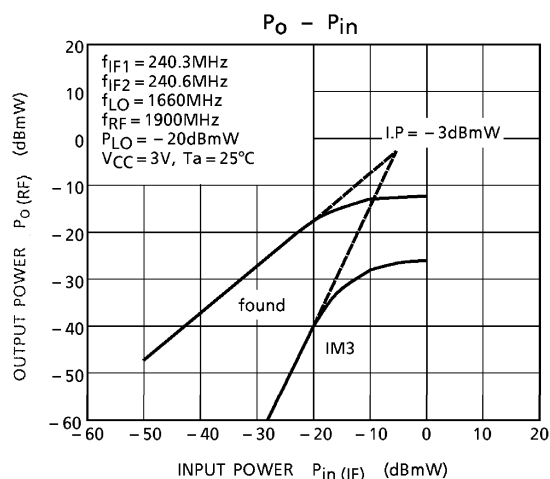
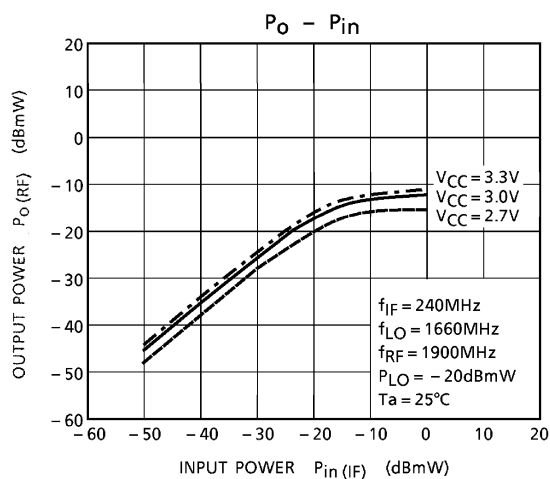
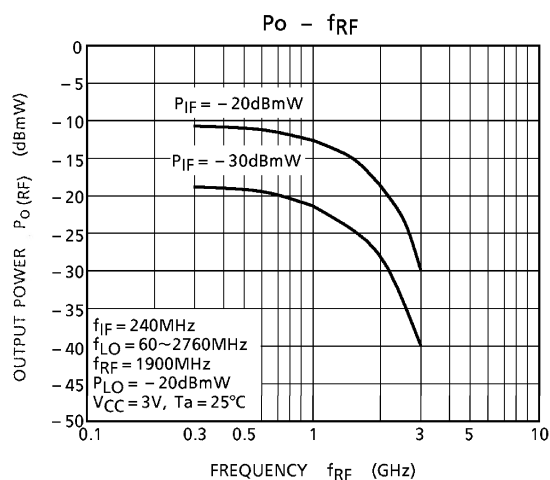
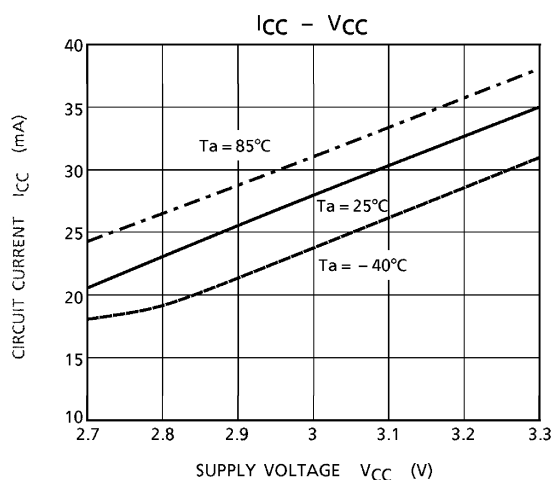
(Note) Input signal is modulated to $\pi/4QPSK$ ($\alpha = 0.5$). Bit rate is 384 kbps.

BLOCK DIAGRAM



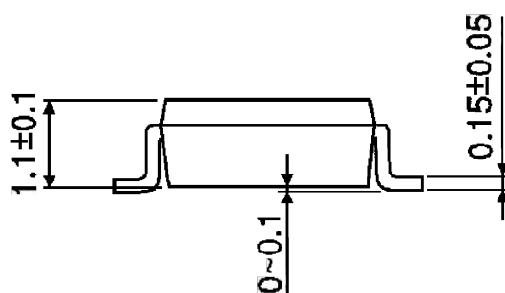
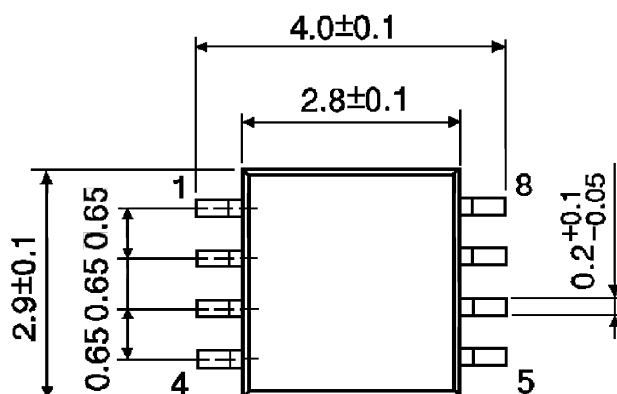
TEST CIRCUIT 1





OUTLINE DRAWING
SSOP8-P-0.65

Unit : mm



Weight : 0.02g (Typ.)